# NOISE IMPACT STUDY

# "RESIDENTIAL DEVELOPMENT"
# 2220 STANLEY AVENUE
# NIAGARA FALLS, ON
# REGION OF NIAGARA

Prepared for:

Newcastle Communities
1725 Third Street Louth
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October 2024
Our File No: 24-2040

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## 1.0 INTRODUCTION

dBA Acoustical Consultants Inc. has been retained by Newcastle Communities, to provide a noise impact study for the proposed 2220 Stanley Avenue residential development located in Niagara Falls, ON, Region of Niagara.

The purpose of the study will determine the noise impact from Stanley Avenue traffic and nearby stationary noise sources that may impact the proposed development, as required for application approval for the City of Niagara Falls, Region of Niagara.

This study will detail noise impact relative to the site plan and recommend noise control measures necessary (if applicable) to meet Ministry of Environment Conservation and Parks (MECP) Publication NPC-300 entitled "Stationary & Transportation Sources-Approval & Planning guidelines while satisfying the planning requirements of the City of Niagara Falls, Region of Niagara.

Vibration is not considered as there are no heavy industrial operations in the area of the proposed development. CN Rail was not considered in this report as it is over 500m away from the proposed development and there is an approximate 4m difference in elevation with the proposed site being higher as well as several large industrial buildings separation the rail from the proposed development. Aircraft is not a concern as the development is located outside the NEF 25 contour of the area. See attached Figure 1 Site Location.

## 2.0 SITE DESCRIPTION

Proposed is one 3-storey building with basement totaling 28 units. The proposed development is located approximately 455m east of Stanley Avenue and direct behind a single storey home. Stanley Avenue is a two-lane roadway, running north and south with a posted speed limit of 60km/hr.

To the south and east of the proposed development are 2-storey single family homes. To the north is a vineyard. To the west are Allen's Half-Way Sand Pit Ltd. (2200 Stanley Avenue), Vector Tooling (2179 Stanley Avenue) and Modern Landfill Inc. of Canada (2025 Fruitbelt Parkway). These three businesses will be discussed later in this noise report. See attached Figure 2 Site Plan.

## 3.0 REGULATORY CONTEXT

The MECP Publication NPC-300, Stationary & Transportation Sources-Approval & Planning guidelines defines a point of reception/receptor as *"any point on the premises of a person where the sound or vibration originating from other than those premises are received."*

The point of reception may be located on any of the following, or zoned for future use, premises including but not limited to the following: residential homes, retirement homes, etc.

The areas surrounding the proposed Residential Development is indicative of a "Class 1 Area" as defined in MECP Publication NPC-300, Stationary & Transportation Sources-Approval & Planning guidelines.

The applicable sound limits are the higher of:

- The existing ambient sound level; or
- The minimum values of Table 1.

*No restrictions apply to stationary sources if the one-hour equivalent sound exposure (Leq) is lower than the levels in the following Table 1.*

Traffic background noise levels may result in higher noise levels than the following Table 1, Minimum Sound Level Limits.

| TABLE 1 - Minimum Sound Level Limits (Class 1 Area) | |
|---|---|
| Time Period | $L_{eq}$ (dBA) |
| 07:00 - 19:00 | 50 |
| 19:00 - 23:00 | 50 |
| 23:00 – 07:00 | 45 |

### 3.1 AREA INDUSTRIAL BUSINESSES

Allen's Half-Way Sand Pit Ltd. is located at 2200 Stanley Avenue. The office building is located approximately 100m west of the proposed development, however the sand pits are much further west. During our site inspection on May 6th, 2024, it was confirmed that the business will not have an acoustical impact on the proposed development.

Vector Tooling is located at 2179 Stanley Avenue. It is a small tool manufacturer that is approximately 100m northwest of the proposed development. During our site inspection on May 6th, 2024, it was confirmed that the manufacturing process is completed within the building and no exterior work is done. This business will not have an acoustical impact on the proposed development.

Modern Landfill Inc. of Canada is located at 2025 Fruitbelt Parkway. The road access to the site is approximately 250m northwest of the proposed development and the closest section of the property is approximately 225m away. The landfill operates under MECP D-6 noise and air guidelines (Certificate of Emissions). Due to these guidelines this business will not have any noise or odour impact on the proposed development.

Cotton Inc., a concrete contractor, is located at 2125 Fruitbelt Parkway and is located more than 500m northwest of the proposed development. They are under MECP D-6 noise guidelines and during our site inspection on May 6th, 2024, it was confirmed that the business will not have an acoustical impact on the proposed development.

## 4.0 NOISE IMPACT ASSESSMENT

### 4.1 NOISE CRITERIA

The MECP specifies limits for road noise relative to new residential developments. The MECP Publication NPC-300 entitled "Stationary & Transportation Sources-Approval & Planning, specifies the criteria, summarized as follows:

| TABLE 2- Road Traffic Sound Levels Limits | |
|---|---|
| Time Period | Leq (dBA) |
| 07:00 – 23:00 (16 hr.) | 55 Outdoor Living area |
| 07:00 – 23:00 (16 hr.) | 55 Plane of Window |
| 23:00 – 07:00 (8 hr.) | 50 Plane of Bedroom window |

*The OLA refers to an outdoor patio, a backyard, a terrace or other area where outdoor passive recreation is expected. Noise levels are calculated at the upper storey bedroom window to represent nighttime (23:00-0700) periods.*

Where noise levels estimated in the (OLA) and at the first-floor window, (POW) are equal to or less than the values listed in Table 2, no noise control measures are required. Where noise levels exceed Table 2 values, the following action is required:

| TABLE 3 –Noise Control Requirements | | |
|---|---|---|
| Time Period | Noise Level Leq (dBA) | Action Required |
| 07:00 - 23:00 Daytime (OLA) | 56 to 60 | Warning Clause Type "A" |
| | > 60 | Barrier & Warning Clause Type "B" |
| 07:00 – 23:00 Daytime (POW) | > 55 | Provision for A/C, Warning Clause "C" |
| | > 65 | Central A/C, Warning Clause "D" |
| | > 65 | Building Component Specification |
| 23:00 to 07:00 Nighttime (POW) | > 50 | Provision for A/C and Warning Clause Type "C" |
| | > 60 | Building Component Specification |
| | > 60 | Central Air and Warning Clause Type "D" |

*Where nighttime noise levels exceed 60 dBA, building components must be designed to meet Table 3 indoor sound level limits.*

| TABLE 4 - Indoor Road Sound Levels Limits | | |
|---|---|---|
| Indoor Location | Leq (dBA) | |
| | Road | Rail |
| Living/Dining 7:00 – 23:00 | 45 | N/A |
| Bedroom 23:00 - 07:00 | 40 | N/A |

### 4.2 ROAD NOISE

Predicted road traffic noise levels were calculated for Stanley Avenue which is considered the major road noise source in the proposed development area. The most current road traffic volumes for Stanley Avenue AADT (Annual Average Daily Traffic) were provided via email from Manny Rataul, C.E.T., rcji, Project Manager Road Safety, Transportation Services Division, Niagara Region. He recommended using the 2018 data over the 2021 data due to 2021 being lower due to COVIS-19 restrictions. See Appendix "A".

The MECP computer program STAMSON version 5.04 was used to carry out prediction calculations and the traffic data is summarized in Table 5. The daytime/nighttime volume ratios relative to Stanley Avenue is calculated using a 90/10 split. (See Appendix "A")

The percentage of annual growth for Stanley Avenue was figured at 2% over 26 years and is reflective as the worst-case scenario. Stanley Avenue truck volumes were factored at 2% medium and 4% heavy of the total vehicle volumes. (See Figure 3 Receptor Locations).

| TABLE 5 – Future Road Traffic Volumes (2044) | | | |
|---|---|---|---|
| Stanley Avenue | AADT 8194 Vehicles | | |
| | Cars | Medium Trucks | Heavy Trucks |
| Day | 7079 | 147 | 147 |
| Night | 789 | 16 | 16 |

The following Table 6 summarizes the Stanley Avenue "free field" traffic noise prediction results, modeled at 6 receptor locations representative of the north & south façades within the proposed development (See Figure 3 Receptor Locations).

| TABLE 6 – Predicted Stanley Avenue Future Traffic Noise (dBA) | | |
|---|---|---|
| Stanley Avenue | 07:00 – 23:00 | 23:00 – 07:00 |
| R1 – North Façade & OLA | 56 dBA (2.5m) | 51 dBA (8.5m) |
| R2 – North Façade | 55 dBA (2.5m) | 50 dBA (8.5m) |
| R3 – North Façade | 51 dBA (2.5m) | 46 dBA (8.5m) |
| R4 – South Façade | 60 dBA (2.5m) | 54 dBA (8.5m) |
| R3 – South Façade | 60 dBA (2.5m) | 53 dBA (8.5m) |
| R3 – South Façade | 51 dBA (2.5m) | 46 dBA (8.5m) |

## 5.0 RECOMMENDATIONS - NOISE CONTROL

### 5.1 OUTDOOR NOISE LEVELS

Calculated daytime road noise levels at the Plane of Window (POW) exceed the 55 dBA criteria for R1 outlined in Table 2. In lieu of a noise barrier it is recommended that a Type "A" Warning Clause be used.

### 5.2 INDOOR NOISE LEVELS

Calculated nighttime road noise levels at the Plane of Window (POW) exceed the 50 dBA criteria outlined in Table 1 for indoor spaces. Ontario Building Code (OBC) with suffice for the proposed renovation. It is recommended that STC-28 non-acoustically tested windows be installed as they will achieve MECP NPC-300 Transportation and Stationary Sources Noise guidelines.

| TABLE 7 – Recommended Door, Wall, and Window Construction | | | |
|---|---|---|---|
| LOCATION | Window STC To Be Used | Exterior Wall STC | Patio Door Construction STC |
| All Units | Example | Example | Example |
| Bedroom | OBC | OBC | OBC |
| Living room | OBC | OBC | OBC |

## 6.0 VENTILATION / WARNING CLAUSES

Ventilation and Warning Clause requirements are required for this project as noted in Table 8 following. It is recommended that the appropriate Warning Clauses be inserted into all Offers and Agreements of Purchase and Sale or Lease.

TABLE 8 - Ventilation and Warning Clause Requirements

| LOCATION | VENTILATION | WARNING CLAUSE |
|---|---|---|
| All Units | Provisions for Air Conditioning | Type "A" & "C" |

TYPE A: (All Units)
"Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the Municipality's and the MECP's noise criteria."

TYPE C: (All Units)
"This dwelling unit had been fitted with a forced air heating system and the ducting, etc. was sized to accommodate central air conditioning. Installation of central air conditioning by the occupant will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the Municipality's and the MECP's noise criteria. (Note: The location and installation of the outdoor air conditioning device should be done so as to comply with noise criteria of MECP Publication NPC-216, Residential Air Conditioning Devices and thus minimize the noise impacts both on and in the immediate vicinity of the subject property.)"

## 7.0 SUMMARY OF RECOMMENDATIONS

The following noise control measures are required for this development:

- Provisions for Air Conditioning for all units (Table 8).
- Ontario Building Code (OBC) for Window, Door, and Wall construction as recommended in Table 7
- Registered Warning Clause Type "A" & "C" on title, for all units (Table 8).
- It is recommended that a qualified acoustical consultant certify that the required noise control measures have been incorporated into the builder's plans prior to issuance of a building permit.
- It is recommended that a qualified acoustical consultant certify that the required control measures have been properly installed prior to an occupancy permit.

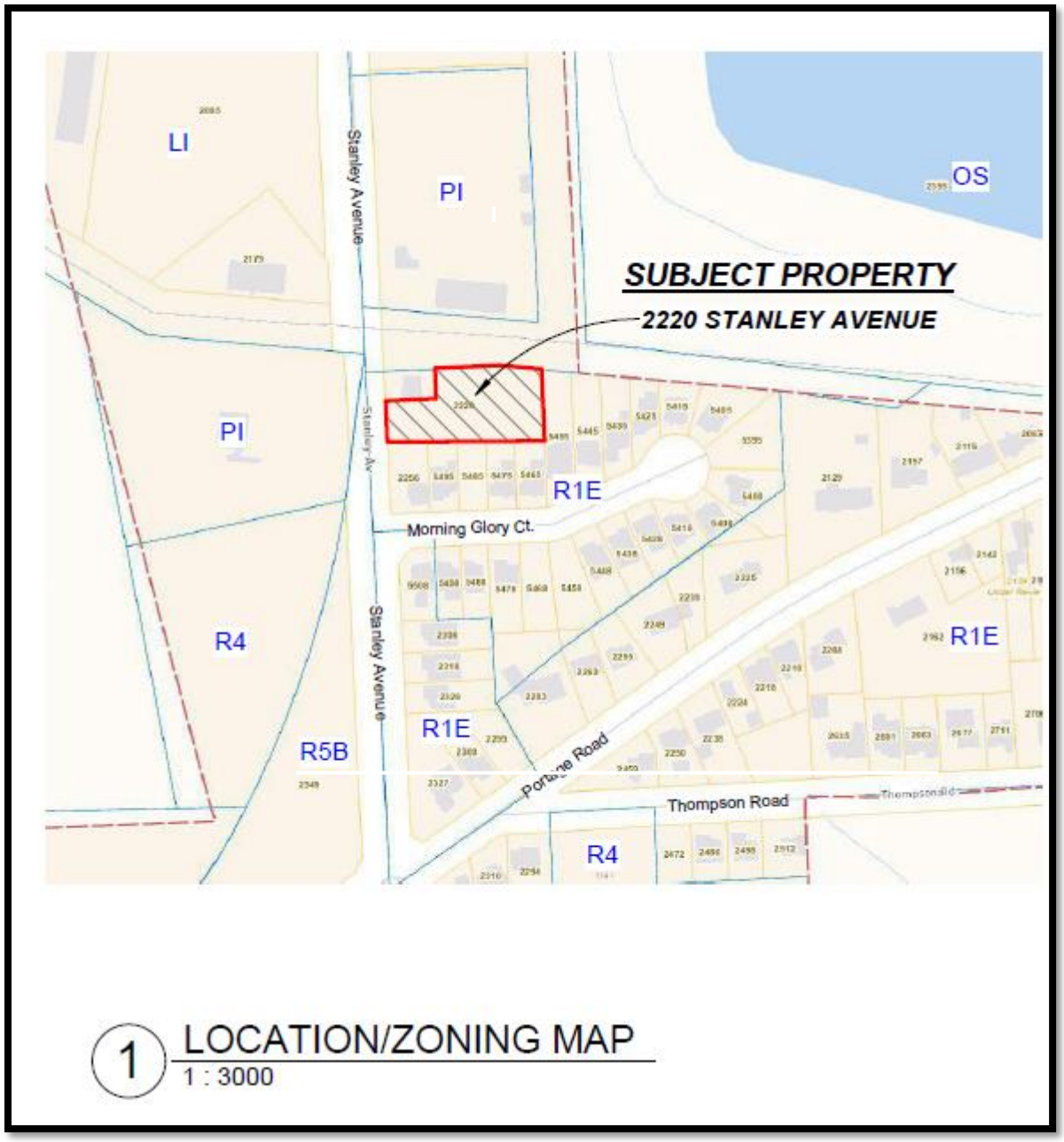
## 8.0 CONCLUSIONS

dBA Acoustical Consultants Inc. has been retained by Newcastle Communities and provided a noise impact study for the proposed 2220 Stanley Avenue residential development located in Niagara Falls, ON, Region of Niagara.

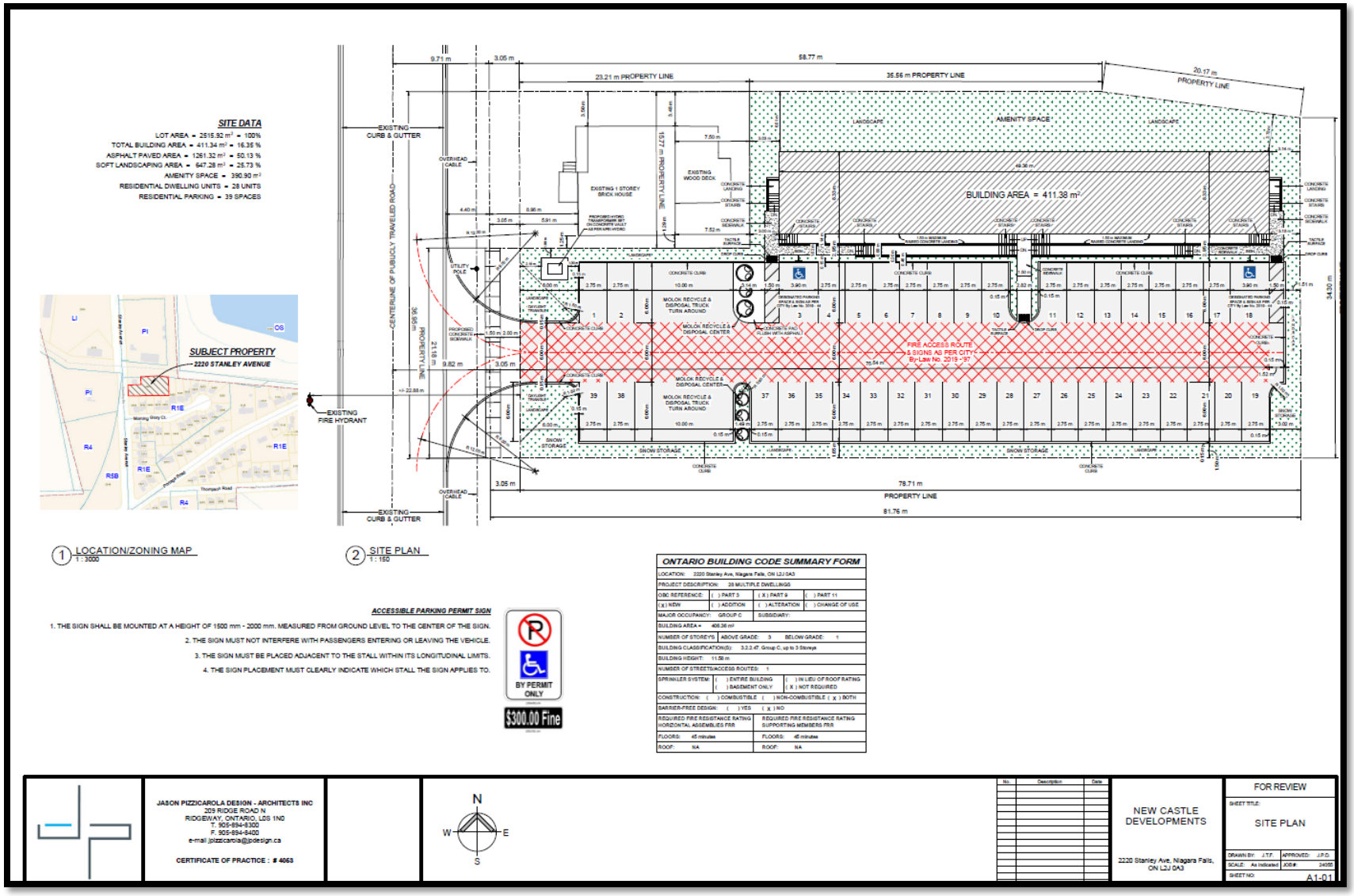
The study determined the noise impact from Stanley Avenue traffic that impacted the proposed development and the nearby stationary noise sources that did not impact the proposed development, as required for application approval for the City of Niagara Falls, Region of Niagara.

This study detailed noise impact relative to the site plan and recommended noise control measures necessary to meet Ministry of Environment Conservation and Parks (MECP) Publication NPC-300 entitled “Stationary & Transportation Sources-Approval & Planning guidelines while satisfying the planning requirements of the City of Niagara Falls, Region of Niagara.

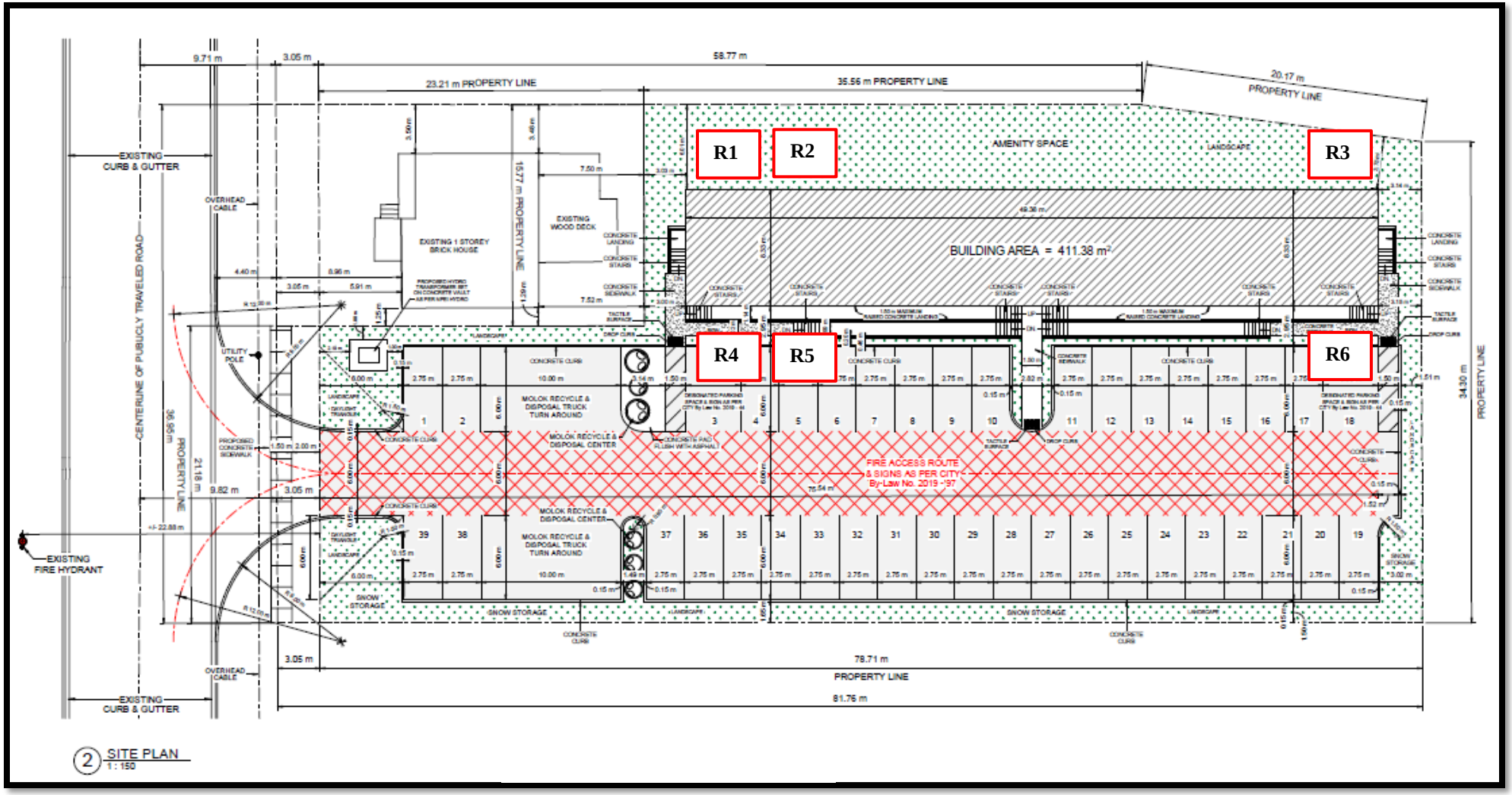
# FIGURE 1
# LOCATION MAP



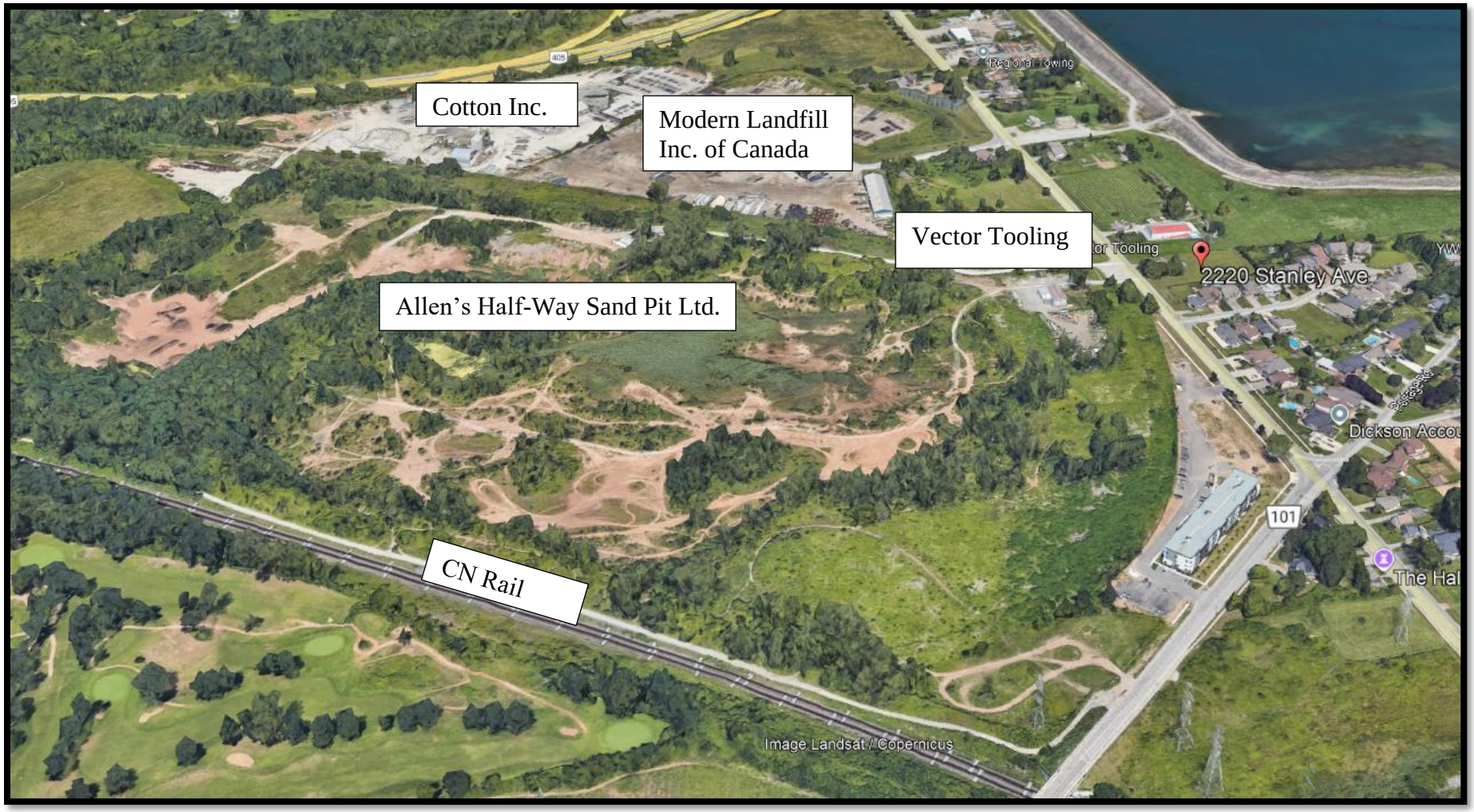
# FIGURE 2
# SITE PLAN



# FIGURE 3
# RECEPTOR LOCATIONS



# FIGURE 4
# AREA OVERVIEW



# APPENDIX "A"

# 2018 NIAGARA REGION AADT
# STANLEY AVENUE

Hi Manny,

I am looking for the most recent AADT for the area of 2220 Stanley Avenue in Niagara Falls.

Thank You

Nicole Cleaver

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dBA Acoustical Consultants Inc.
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1447 Upper Ottawa St
Hamilton ON
L8W 3K0
Office: 905-383-9491

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Hello Nicole,

We have two sets of data, I recommend using the data pre-covid data:

2018: 8200
2021: 6300

**Manny Rataul, C.E.T., rcji**
**Project Manager Road Safety**
*Transportation Services Division, Niagara Region*

**Email: Manny.Rataul@niagararegion.ca**
**Address: 1815 Sir Isaac Brock Way St., Thorold ON, L2V4T7**
**www.niagararegion.ca**

# STAMSON CALCULATIONS

```
STAMSON 5.04        SUMMARY REPORT        Date: 02-10-2024 12:33:05
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R1stan.te            Time Period: Day/Night 16/8 hours
Description: R1 Stanley North Façade & OLA
                  TOTAL Leq FROM ALL SOURCES              (DAY): 56.00
                                                         (NIGHT): 50.65

Road data, segment # 1: Stanley (day/night)
-------------------------------------------
Car traffic volume  : 11609/1290  veh/TimePeriod  *
Medium truck volume :   247/27    veh/TimePeriod  *
Heavy truck volume  :   494/55    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8200
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  26.00
    Medium Truck % of Total Volume     :   2.00
    Heavy Truck  % of Total Volume     :   4.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Stanley (day/night)
-----------------------------------------
Angle1   Angle2           :  -0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  45.00 / 45.00  m
Receiver height           :   2.50 / 8.50   m
Topography                :      1       (Flat/gentle slope; no
barrier)

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Stanley          !     1.41 !    56.00 !    56.00
--------------------+---------+---------+---------
                      Total                  56.00 dBA

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Stanley          !     1.41 !    50.65 !    50.65
--------------------+---------+---------+---------
                      Total                  50.65 dBA
```

```
STAMSON 5.04        SUMMARY REPORT        Date: 02-10-2024 12:48:31
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2stan.te            Time Period: Day/Night 16/8 hours
Description: R2 Stanley North Facade
                  TOTAL Leq FROM ALL SOURCES              (DAY): 55.25
                                                          (NIGHT): 49.99

Road data, segment # 1: Stanley (day/night)
-------------------------------------------
Car traffic volume  : 11609/1290  veh/TimePeriod  *
Medium truck volume :   247/27    veh/TimePeriod  *
Heavy truck volume  :   494/55    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8200
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  26.00
    Medium Truck % of Total Volume     :   2.00
    Heavy Truck  % of Total Volume     :   4.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Stanley (day/night)
-----------------------------------------
Angle1   Angle2           :  -0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  50.00 / 50.00  m
Receiver height           :   2.50 / 8.50   m
Topography                :      1       (Flat/gentle slope; no
barrier)

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Stanley          !     1.41 !    55.25 !    55.25
--------------------+---------+---------+---------
                      Total                  55.25 dBA

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Stanley          !     1.41 !    49.99 !    49.99
--------------------+---------+---------+---------
                      Total                  49.99 dBA
```

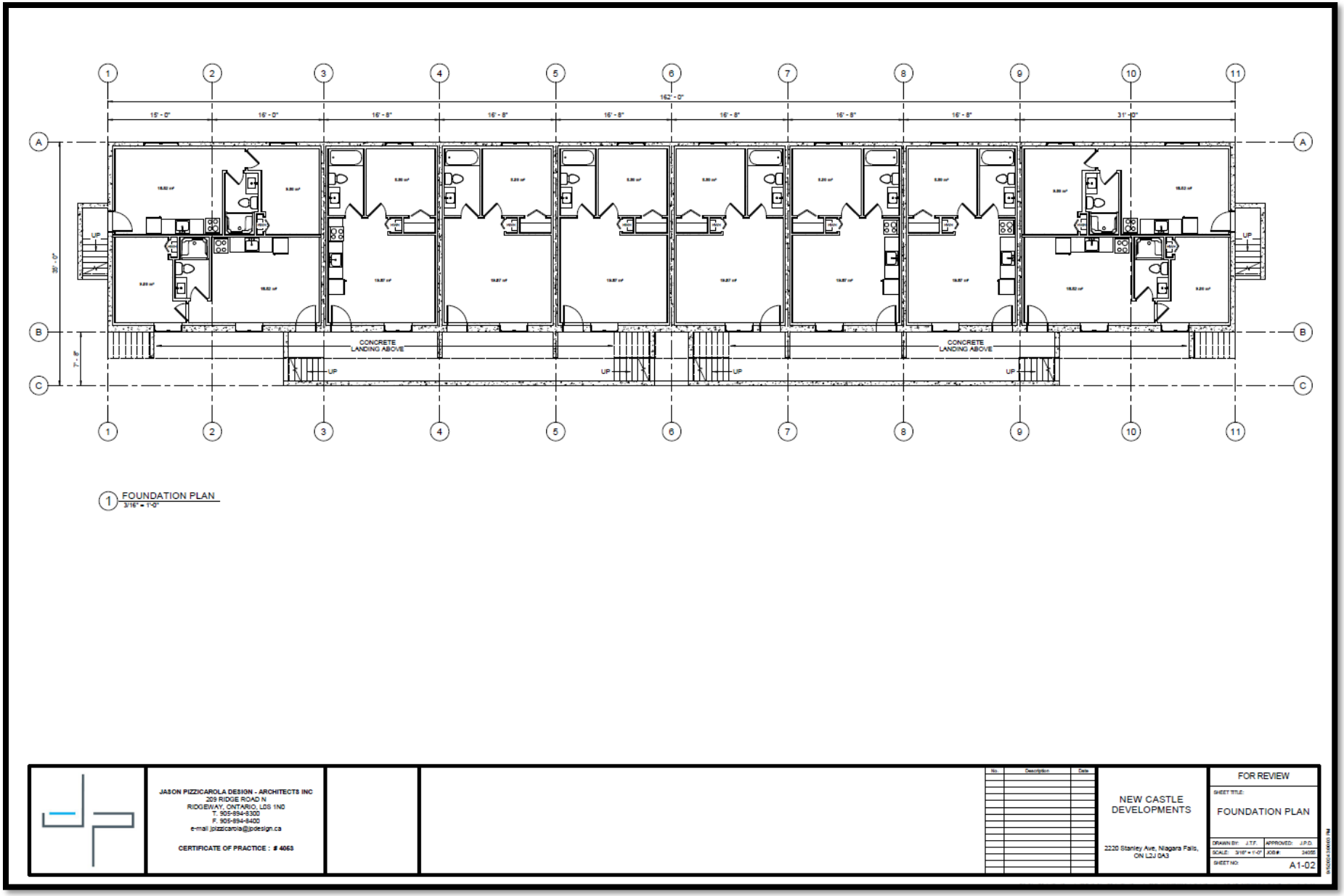
```
STAMSON 5.04        SUMMARY REPORT        Date: 02-10-2024 12:42:05
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r3stan.te            Time Period: Day/Night 16/8 hours
Description: R3 Stanley North Facade
                  TOTAL Leq FROM ALL SOURCES              (DAY): 51.09
                                                          (NIGHT): 46.28

Road data, segment # 1: Stanley (day/night)
-------------------------------------------
Car traffic volume  : 11609/1290  veh/TimePeriod  *
Medium truck volume :   247/27    veh/TimePeriod  *
Heavy truck volume  :   494/55    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8200
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  26.00
    Medium Truck % of Total Volume     :   2.00
    Heavy Truck  % of Total Volume     :   4.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Stanley (day/night)
-----------------------------------------
Angle1   Angle2           :  -0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   2.50 / 8.50   m
Topography                :      1       (Flat/gentle slope; no
barrier)

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Stanley          !     1.41 !    51.09 !    51.09
--------------------+---------+---------+---------
                      Total                  51.09 dBA

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Stanley          !     1.41 !    46.28 !    46.28
--------------------+---------+---------+---------
                      Total                  46.28 dBA
```

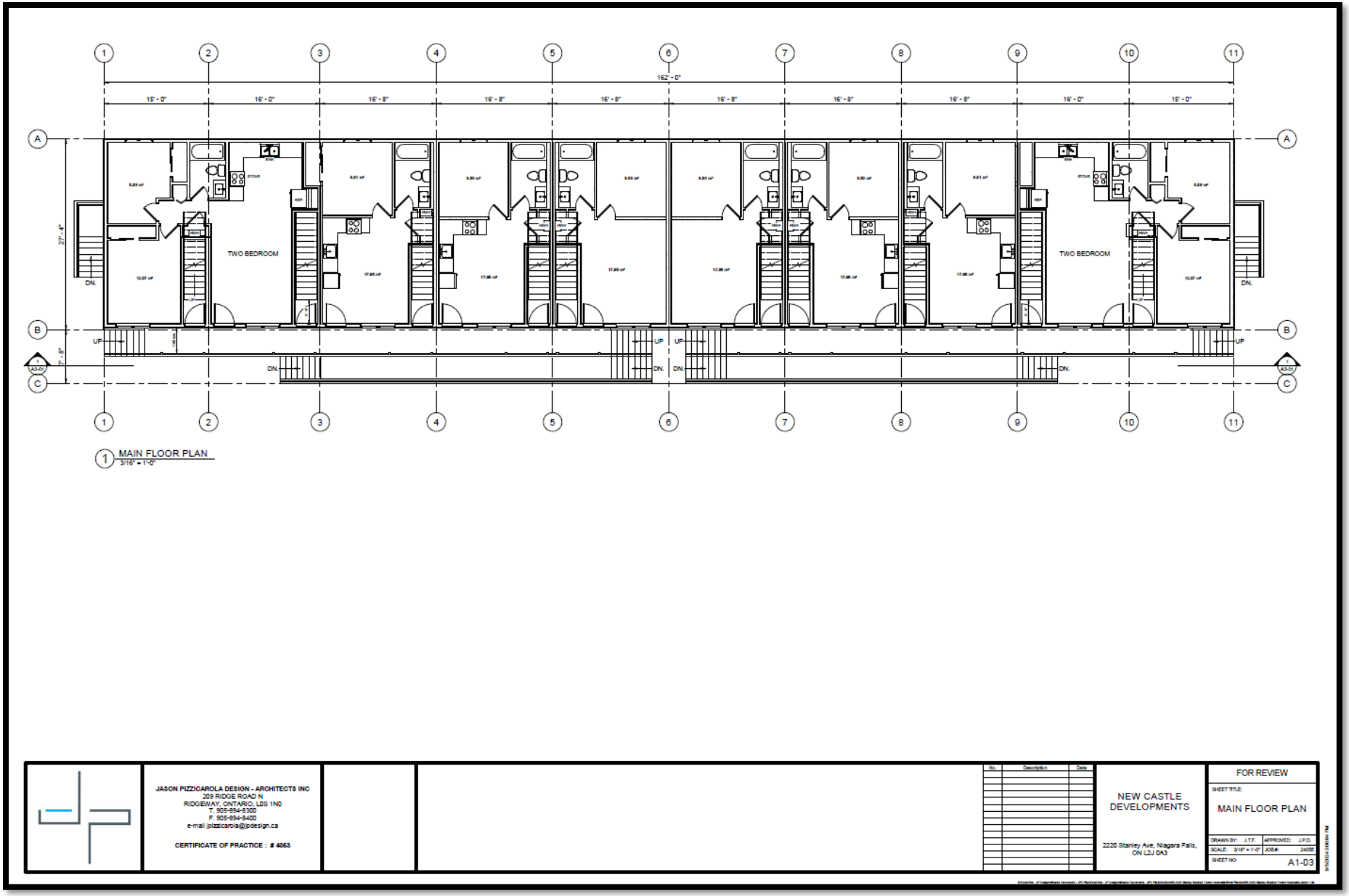
```
STAMSON 5.04        SUMMARY REPORT        Date: 02-10-2024 12:45:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r4stan.te            Time Period: Day/Night 16/8 hours
Description: R4 Stanley South Facade
                  TOTAL Leq FROM ALL SOURCES              (DAY): 60.43
                                                          (NIGHT): 53.90

Road data, segment # 1: Stanley (day/night)
-------------------------------------------
Car traffic volume  : 11609/1290  veh/TimePeriod  *
Medium truck volume :   247/27    veh/TimePeriod  *
Heavy truck volume  :   494/55    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8200
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  26.00
    Medium Truck % of Total Volume     :   2.00
    Heavy Truck  % of Total Volume     :   4.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Stanley (day/night)
-----------------------------------------
Angle1   Angle2           :  -0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  45.00 / 45.00  m
Receiver height           :   2.50 / 8.50   m
Topography                :      1       (Flat/gentle slope; no
barrier)

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Stanley          !     1.41 !    60.43 !    60.43
--------------------+---------+---------+---------
                      Total                  60.43 dBA

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Stanley          !     1.41 !    53.90 !    53.90
--------------------+---------+---------+---------
                      Total                  53.90 dBA
```

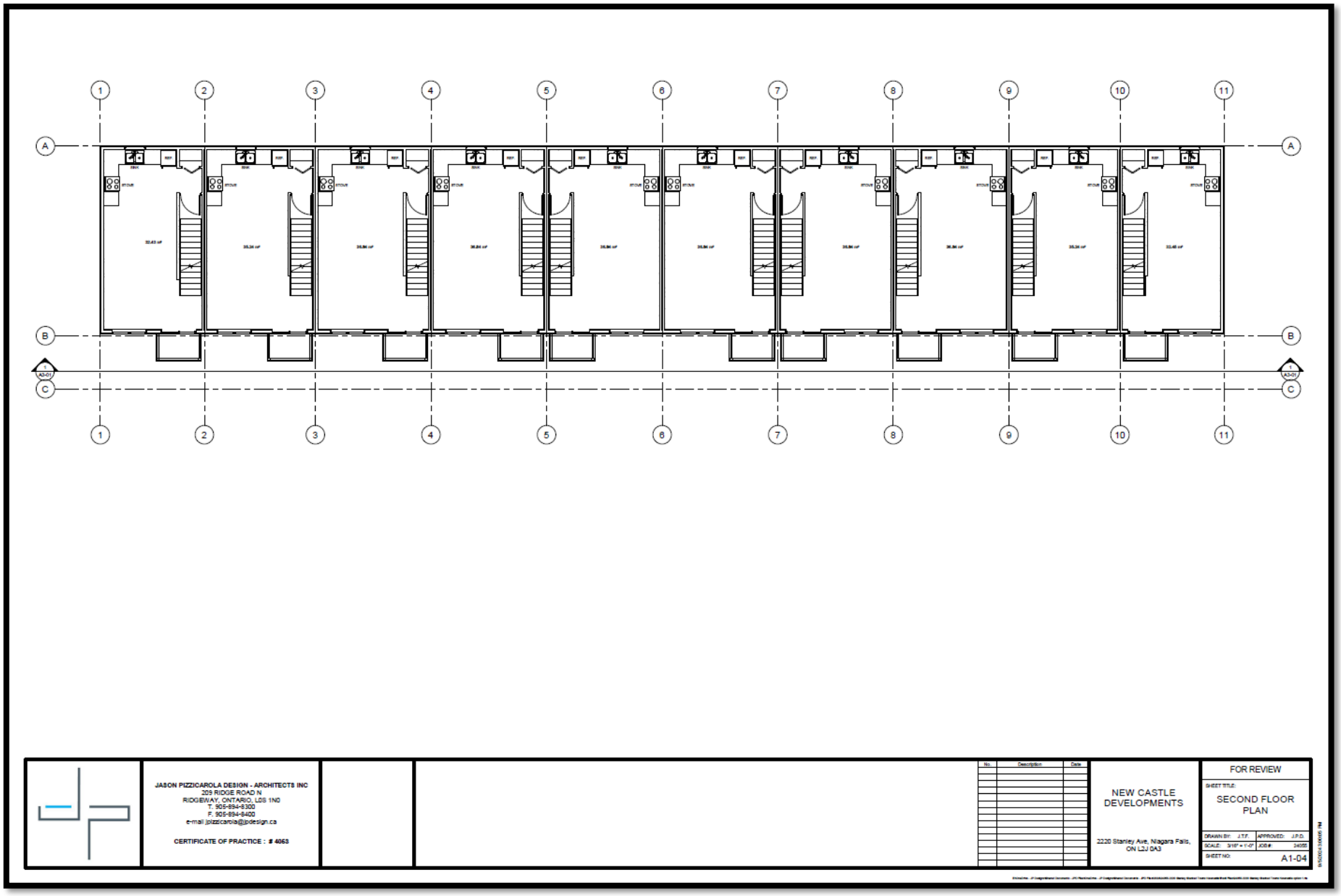
```
STAMSON 5.04        SUMMARY REPORT        Date: 02-10-2024 12:49:03
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2stan.te            Time Period: Day/Night 16/8 hours
Description: R5 Stanley South Facade
                  TOTAL Leq FROM ALL SOURCES              (DAY): 59.97
                                                          (NIGHT): 53.44

Road data, segment # 1: Stanley (day/night)
-------------------------------------------
Car traffic volume  : 11609/1290  veh/TimePeriod  *
Medium truck volume :   247/27    veh/TimePeriod  *
Heavy truck volume  :   494/55    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8200
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  26.00
    Medium Truck % of Total Volume     :   2.00
    Heavy Truck  % of Total Volume     :   4.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Stanley (day/night)
-----------------------------------------
Angle1   Angle2           :  -0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  50.00 / 50.00  m
Receiver height           :   2.50 / 8.50   m
Topography                :      1       (Flat/gentle slope; no
barrier)

Result summary (day)
--------------------
                     !  source  !   Road   !  Total
                     !  height  !   Leq    !   Leq
                     !    (m)   !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Stanley           !     1.41 !    59.97 !    59.97
--------------------+---------+---------+---------
                       Total                  59.97 dBA

Result summary (night)
----------------------
                     !  source  !   Road   !  Total
                     !  height  !   Leq    !   Leq
                     !    (m)   !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Stanley           !     1.41 !    53.44 !    53.44
--------------------+---------+---------+---------
                       Total                  53.44 dBA
```

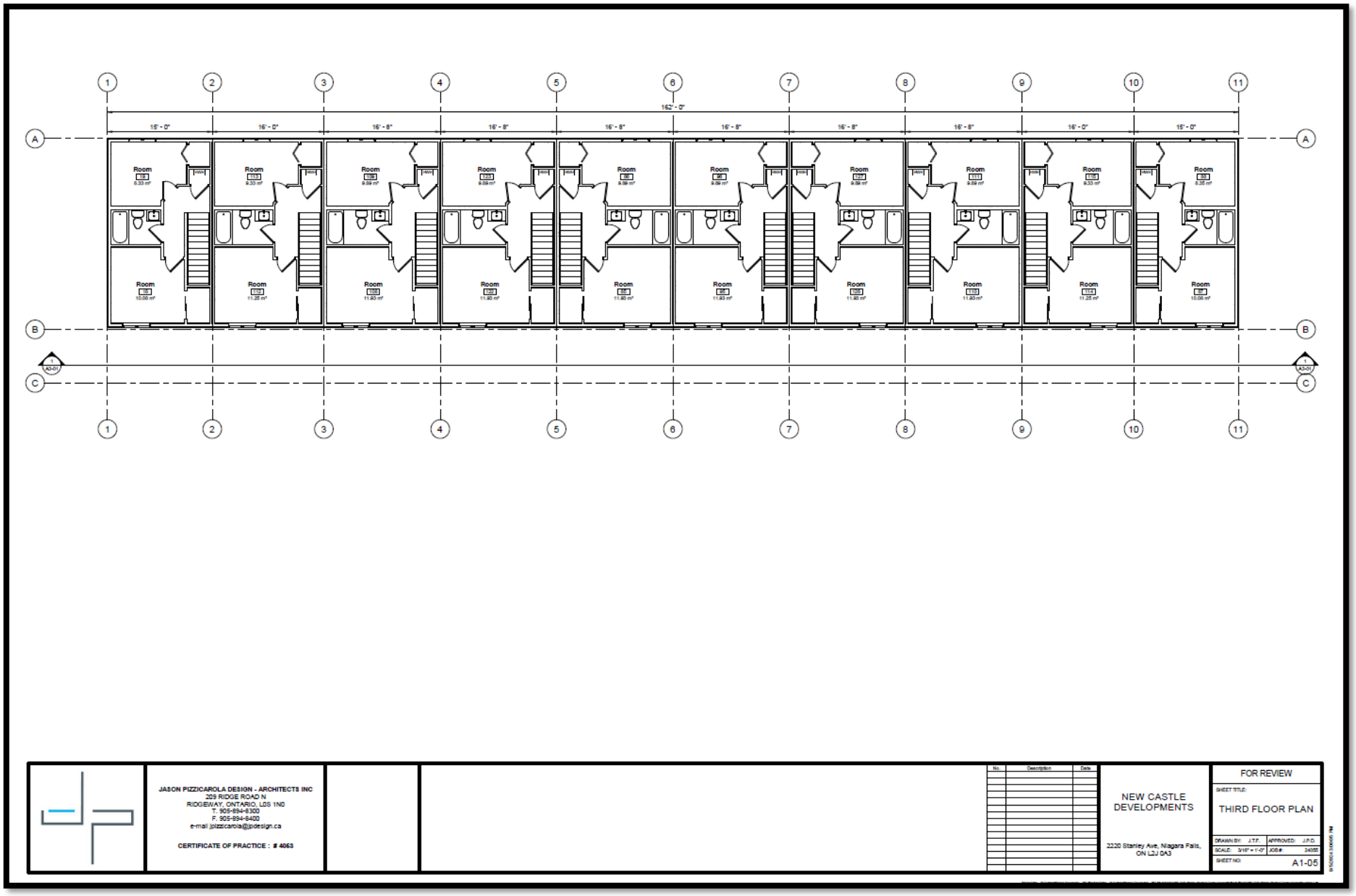
```
STAMSON 5.04        SUMMARY REPORT        Date: 03-10-2024 09:53:42
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r6stan.te            Time Period: Day/Night 16/8 hours
Description: R6 Stanley South Facade
                  TOTAL Leq FROM ALL SOURCES              (DAY): 51.09
                                                          (NIGHT): 46.28

Road data, segment # 1: Stanley (day/night)
-------------------------------------------
Car traffic volume  : 11609/1290  veh/TimePeriod  *
Medium truck volume :   247/27    veh/TimePeriod  *
Heavy truck volume  :   494/55    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8200
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  26.00
    Medium Truck % of Total Volume     :   2.00
    Heavy Truck  % of Total Volume     :   4.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Stanley (day/night)
-----------------------------------------
Angle1   Angle2           :  -0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   2.50 / 8.50   m
Topography                :      1       (Flat/gentle slope; no
barrier)

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Stanley          !     1.41 !    51.09 !    51.09
--------------------+---------+---------+---------
                      Total                  51.09 dBA

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Stanley          !     1.41 !    46.28 !    46.28
--------------------+---------+---------+---------
                      Total                  46.28 dBA
```

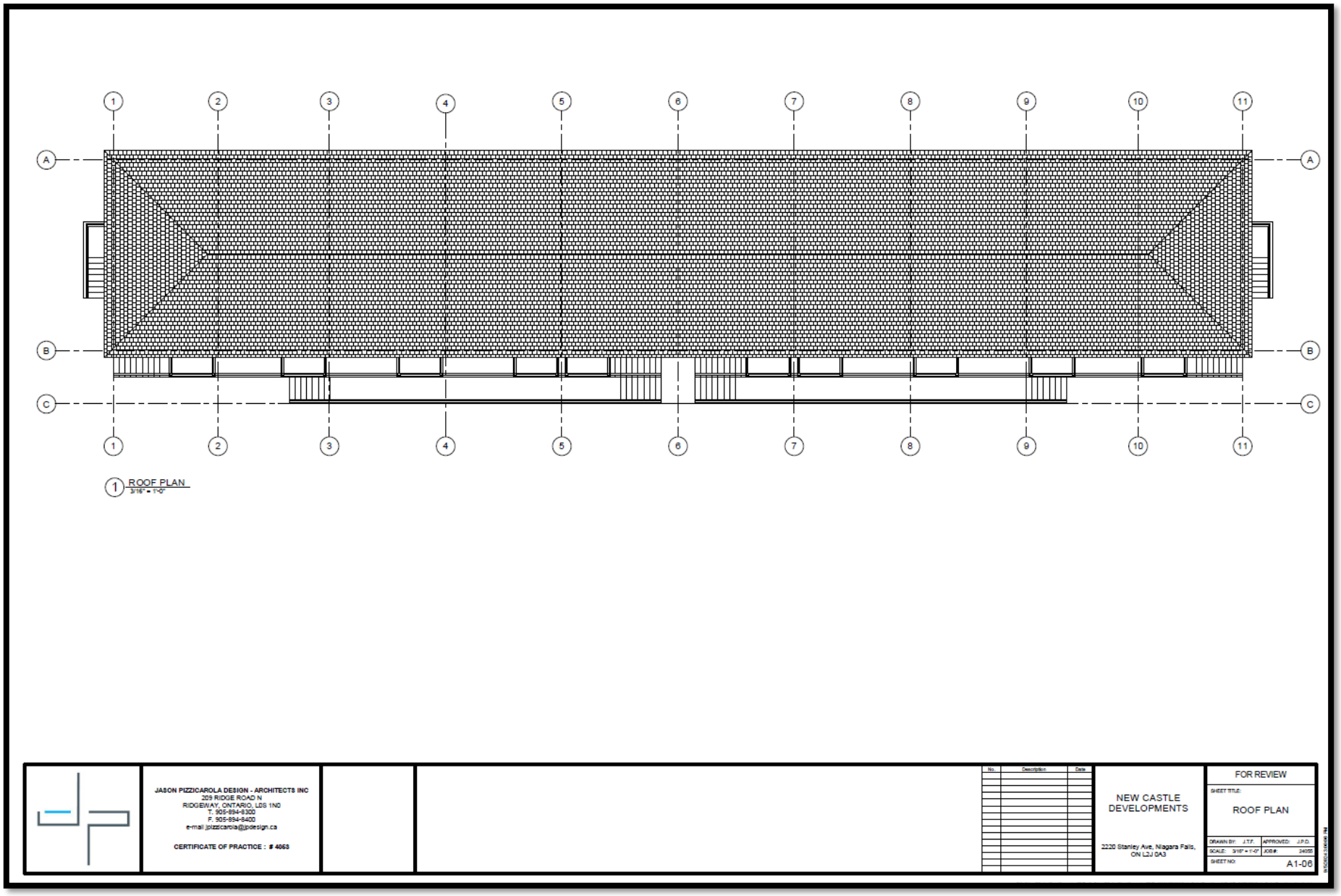
# FLOOR PLANS


1
2
3
4
5
6
7
8
9
10
11
162' - 0"
15' - 0"
15' - 0"
16' - 8"
16' - 8"
16' - 8"
16' - 8"
16' - 8"
16' - 8"
31' - 0"
A
B
C
39' - 0"
7' - 6"
UP
CONCRETE LANDING ABOVE
CONCRETE LANDING ABOVE
1 FOUNDATION PLAN
3/16" = 1'-0"
JASON PIZZICAROLA DESIGN - ARCHITECTS INC
209 RIDGE ROAD N
RIDGEWAY, ONTARIO, L0S 1N0
T. 905-894-9300
F. 905-894-8400
e-mail:jpizzicarola@jpdesign.ca
CERTIFICATE OF PRACTICE : # 4068
No.
Description
Date
NEW CASTLE DEVELOPMENTS
2220 Stanley Ave, Niagara Falls, ON L2J 0A3
FOR REVIEW
SHEET TITLE:
FOUNDATION PLAN
DRAWN BY: J.T.T.
APPROVED: J.P.D.
SCALE: 3/16" = 1'-0"
JOB #: 24055
SHEET NO: A1-02


1
2
3
4
5
6
7
8
9
10
11
162' - 0"
15' - 0"
16' - 0"
16' - 8"
A
B
C
27' - 4"
7' - 8"
TWO BEDROOM
TWO BEDROOM
UP
DN.
1 MAIN FLOOR PLAN
3/16" = 1'-0"
JASON PIZZICAROLA DESIGN - ARCHITECTS INC
209 RIDGE ROAD N
RIDGEWAY, ONTARIO, L0S 1N0
T. 905-894-8300
F. 905-894-8400
e-mail jpizzicarola@jpdesign.ca
CERTIFICATE OF PRACTICE : # 4068
No.
Description
Date
NEW CASTLE DEVELOPMENTS
2220 Stanley Ave, Niagara Falls, ON L2J 0A3
FOR REVIEW
SHEET TITLE:
MAIN FLOOR PLAN
DRAWN BY: J.T.F.
APPROVED: J.P.D.
SCALE: 3/16" = 1'-0"
JOB #: 24005
SHEET NO:
A1-03


1
2
3
4
5
6
7
8
9
10
11
A
B
C
A3-07
JASON PIZZICAROLA DESIGN - ARCHITECTS INC
209 RIDGE ROAD N
RIDGEWAY, ONTARIO, L0S 1N0
T. 905-894-8300
F. 905-894-8400
e-mail jpizzicarola@jpdesign.ca
CERTIFICATE OF PRACTICE : # 4063
No.
Description
Date
NEW CASTLE DEVELOPMENTS
2220 Stanley Ave, Niagara Falls, ON L2J 0A3
FOR REVIEW
SHEET TITLE:
SECOND FLOOR PLAN
DRAWN BY: J.T.F.
APPROVED: J.P.D.
SCALE: 3/16" = 1'-0"
JOB #: 24055
SHEET NO: A1-04


1
2
3
4
5
6
7
8
9
10
11
152' - 0"
15' - 0"
16' - 0"
16' - 8"
A
B
C
Room
A3-01
JASON PIZZICAROLA DESIGN - ARCHITECTS INC
209 RIDGE ROAD N
RIDGEWAY, ONTARIO, L0S 1N0
T. 905-894-9300
F. 905-894-8400
e-mail jpizzicarola@jpdesign.ca
CERTIFICATE OF PRACTICE : # 4063
No.
Description
Date
NEW CASTLE DEVELOPMENTS
2220 Stanley Ave, Niagara Falls, ON L2J 0A3
FOR REVIEW
SHEET TITLE:
THIRD FLOOR PLAN
DRAWN BY: J.T.F.
APPROVED: J.P.D.
SCALE: 3/16" = 1'-0"
JOB #: 24056
SHEET NO: A1-05


1
2
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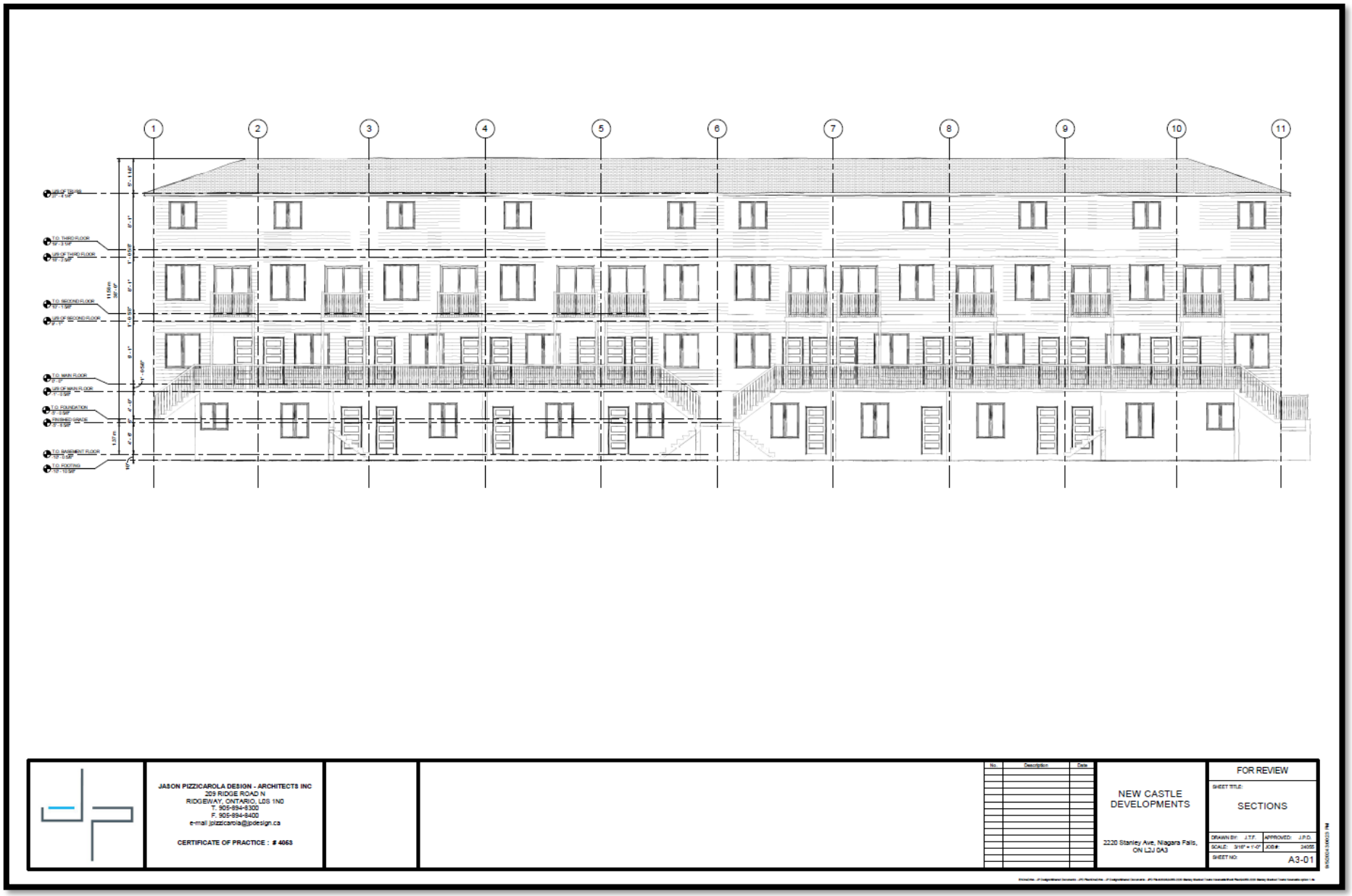
4
5
6
7
8
9
10
11
A
B
C
1 ROOF PLAN
3/16" = 1'-0"
JASON PIZZICAROLA DESIGN - ARCHITECTS INC
209 RIDGE ROAD N
RIDGEWAY, ONTARIO, L0S 1N0
T. 905-894-9300
F. 905-894-9400
e-mail jpizzicarola@jpdesign.ca
CERTIFICATE OF PRACTICE : # 4063
No. Description Date
NEW CASTLE DEVELOPMENTS
2220 Stanley Ave, Niagara Falls, ON L2J 0A3
FOR REVIEW
SHEET TITLE:
ROOF PLAN
DRAWN BY: J.T.F.
APPROVED: J.P.D.
SCALE: 3/16" = 1'-0"
JOB #: 3405
SHEET NO: A1-06

# ELEVATIONS


1 2 3 4 5 6 7 8 9 10 11
11.58 m
38' - 0"
1 FRONT ELEVATION
1:75
11 10 9 8 7 6 5 4 3 2 1
3 REAR ELEVATION
NEW CASTLE DEVELOPMENTS
2220 Stanley Ave, Niagara Falls, ON L2J 0A3
FOR REVIEW
FRONT & REAR ELEVATIONS
A2-01


1
2
3
4
5
6
7
8
9
10
11
T.O. THIRD FLOOR
U/S OF THIRD FLOOR
T.O. SECOND FLOOR
U/S OF SECOND FLOOR
T.O. MAIN FLOOR
U/S OF MAIN FLOOR
T.O. FOUNDATION
FINISHED GRADE
T.O. BASEMENT FLOOR
T.O. FOOTING
JASON PIZZICAROLA DESIGN - ARCHITECTS INC
205 RIDGE ROAD N
RIDGEWAY, ONTARIO, L0S 1N0
T. 905-894-8300
F. 905-894-8400
e-mail:jpizzicarola@pdesign.ca
CERTIFICATE OF PRACTICE : # 4063
No.
Description
Date
NEW CASTLE DEVELOPMENTS
2220 Stanley Ave, Niagara Falls, ON L2J 0A3
FOR REVIEW
SHEET TITLE:
SECTIONS
DRAWN BY: J.T.F.
APPROVED: J.P.D.
SCALE: 3/16" = 1'-0"
JOB #: 24055
SHEET NO:
A3-01

# SITE DATA

LOT AREA = 2515.92 $m^2$ = 100%
TOTAL BUILDING AREA = 411.34 $m^2$ = 16.35 %
ASPHALT PAVED AREA = 1261.32 $m^2$ = 50.13 %
SOFT LANDSCAPING AREA = 647.28 $m^2$ = 25.73 %
AMENITY SPACE = 390.90 $m^2$
RESIDENTIAL DWELLING UNITS = 28 UNITS
RESIDENTIAL PARKING = 39 SPACES

# EXTERIOR WALL STC RATING

## EXTERIOR WALL STC RATINGS

| Wall Configuration | EW1 | EW2 | EW3 | EW4 | EW1R | EW2R | EW3R | EW5 | EW4R | EW6 | EW7 EW5R | EW8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **STC Rating** | **38** | **40** | **43** | **46** | **47** | **48** | **49** | **54** | **55** | **57** | **58** | **62** |

Source: National Research Council, Division of Building Research

NOTES:

1 The common structure of walls EW1 to EW5 is composed of 12.7mm gypsum board, vapour barrier and 38x89 mm studs with 50 mm (or thicker) mineral wool or glass fibre batts in inter-stud cavities.

- EW1 denotes the common structure, plus sheathing, plus wood siding or metal siding and fibre backer board
- EW2 denotes the common structure, plus rigid insulation (25 to 30 mm), and wood siding or metal siding and fibre backer board.
- EW3 denotes simulated mansard with the common structure, plus sheathing, 28 X89 mm framing, sheathing and asphalt roofing material
- EW4 denotes the common structure, plus sheathing and 20 mm stucco.
- EW5 denotes the common structure, plus sheathing, 25 mm air space, 100mm brick veneer.
- EW6 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25 to 50 mm), 100 mm back-up block 100 mm face brick.
- EW7 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25 to 50 mm), 140mm back-up block, 100 mm face brick.
- EW8 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25 to 50 mm), 200 mm concrete.

2 R signifies the mounting of the interior gypsum board on resilient clips.

3 An exterior wall conforming to rainscreen design principles and composed of 12.7 mm gypsum board, 100 mm concrete block, rigid insulation (25 to 50 mm), 25 mm air space, and 100 mm brick veneer has the same STC as EW6.

4 An exterior wall described in EW1 with the addition of rigid insulation (25 to 50 mm) between the sheathing and the external finish has the same STC as EW2.